

T News Letter **TDARS**

G3ZME
G6ZME

TELFORD AND DISTRICT AMATEUR RADIO SOCIETY

www.TDARS.org.uk

FOUNDED 1969

www.TelfordHamfest.co.uk

Issue 280

October-Dec. 2017

www.TDARS.org.uk

Programme

www.telfordhamfest.co.uk

- September 20** *Richard G0VXG: 'Web Server in a Matchbox' and 'Beacon News'*
(Note: Hamsters resume this week. Please access tdars after 7:45pm)
- September 27** *Winter Projects Ideas and Discussion night. Numbers for Power Meter*
- October 4** *Committee Meeting & GX3ZME on the air*
- October 11** *Surplus Equipment Sale*
- October 18** *"Arduino's for Beginners" John M0JZH*
- October 25** *Soup and a Roll : Social Evening*
- November 1** *Committee Meeting & GX3ZME on the air*
- November 8** *HamFest videoed talk: Dom Baines M1KTA "Antennas on DX" M6JAX*
- November 15** *Winter Projects #1. Construction*
- November 22** *The PIXIE CW Transceiver Eric M0KZB*
- November 29** *"Batteries" - Brian G6UDX explains all*
- December 6** *Committee Meeting & GX3ZME on the air*
- December 13** *Christmas Meal—The Woolpack, Shawbirch (tbc)*
- December 20** *Mince Pie & Mulled Wine: Social (at LWVH)*
- December 27** *No meeting. On The Air 8pm on 144.600 MHz FM*

For Amateur Radio Exam Training—enquiries to Mike G3JKX (01952 299677)
For Morse Training and Morse Proficiency Tests Martyn G3UKV or Eric M0KZB.
For Equipment Loans & Returns contact Don M0TBQ.

Radio Amateur Exams- Latest: www.tdars.org.uk/html/training.html

Editorial

The 40th Telford Radio Rally (HamFest) has come and gone. The very first one was held in the Telford Town Centre Shopping Malls as they were then known in 1978, when the Centre was normally locked up to the public as Sunday Trading was not legal. That was a joint venture between Telford & DARS and Salop ARS. In 2006, TDARS became sole organisers of the event, under the title of the Telford HamFest. You can read a more complete history of the event in the Telford HamFest webpages.

(www.telfordhamfest.org.uk). I've been asked several times since this year's event "Are numbers and profits up?" - Well the simple answer is "Yes, by a modest margin". We've certainly not returned to the heady days of the first 25 years or so, when admissions and profits both ran into the thousands. Things are very different in the amateur radio world these days, but the income from the HamFest certainly helps to keep TDARS subscriptions at a modest level and gives us the freedom to make selected purchases and support worthwhile projects, such as the Hamsters.

So what has driven this year's upturn? Well, the transfer of the annual G-QRP mini-convention and Buildathon to Telford has certainly played its part, as intended. This has only been made possible through the good offices of the G-QRP Club and its organisers (they don't have a formal 'Committee'). Discussions with their group started as early as April 2016, and were led by Graham G3MFJ and George G3RJV on their side, with Eric M0KZB and myself for tdars. Both sides further involved their membership as the events gained momentum.

The second positive factor, which is difficult to measure, was the impact of Facebook and Twitter on attendance, and to a lesser extent, perhaps, the revamped TDARS webpages. As most members know, it's not really my scene, but I can certainly see some benefits of a medium that is transparent and immediate in nature. John M0JZH and Dave G0CER did most of the work in this direction, but of course anyone who hit the 'like' button or added a comment or photograph, contributed too. We had quite a few positive feedbacks:-

"I arrived at the rally at 10.00 yesterday and it was just a continuation of your clubs excellence at organising events, well done to all involved" - Ted G4OZG

"There was 3 very good lectures this time and I think they were more my kind of thing than last years..." - Rich G4FAD

"I always found it has a nice atmosphere and the officials there have been very welcoming and helpful." - Graham G3ZOD

"Very warm, encouraging and welcoming folk. Fair trade deals. Inspiring talks and demos. I've already pencilled this one into my calendar even though it is a distance from my QTH. " - Henry M0ZAE

"...onto the Holiday Inn for the social and Buildathon event. It was really well organised, everyone was very friendly and the evening flew by. The project was certainly an eye-opener, a lot of work put into the design and developing the kit ready for the evening. I now wish that I had had a go at building one on the night instead of doing so much talking! Well done Heather!" - Ted G4OZG.

As far as we can tell, the two events will once again both take place in September 2018. Thanks to everyone who made this year's events a great success.

MIV

TELFORD & DISTRICT AMATEUR RADIO SOCIETY

CHAIRMAN: Eric Arkinstall M0KZB (01743 240286)

VICE-CHAIRMAN: Martyn Vincent G3UKV (01952 255416)

SECRETARY: John Humphreys M0JZH (07824 737716)

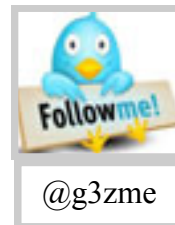
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From Mike G6DFDHave you ever wondered why you've never worked a G9* station ?!**

Well G9 call signs are for commercial radio licences, issued for special experiments and are never used on the amateur radio bands. Shame; it would make a nice call sign and keep in the original series of G's..

Anyone fancy G9Jim, G9Bob, G9Don, G9Rob ? Sorry you can't have them.

Qtc: News & Information



TDARS MEETINGS EVERY WEDNESDAY AT LITTLE WENLOCK VILLAGE HALL UNLESS INDICATED OTHERWISE ON THE FRONT PAGE PROGRAMME. ROOM BOOKED FROM 7PM - 10PM.

If Junior Hamsters group meeting, please do not enter before 7:45pm MEETINGS USUALLY COMMENCE AT 8PM

Please note: A current membership card must be shown to borrow TDARS equipment. Please return borrowed equipment promptly .

Thanks to all who helped at the **G-QRP Social & Buildathon (Sept. 2nd) and the Telford HamFest (Sept.3rd)**. Without a full team of support, the events would not have been possible. There were no major problems, although the uncertain weather caused some last minute re-locations of several outside stands, leading to a rather crowded inside set-up. The BBC Weather website was very unhelpful, as the forecast varied from 'Dry all day' to 'Wet all day' during the preceding week! Over the past 40 years, I recall a wet radio rally event on only two occasions—the first was in 1997, when a thunderstorm greeted us early in the morning—and it was a fitting event as that was the day that Princess Diana tragically died. The second occasion was a few years ago when we had some drizzle for a short period in the middle of the day, but outside traders seemed to take it in their stride. The provisional dates for 2018 are September 1st-2nd. The closure of the AGA works this November may give rise to future parking problems for visitors to the Ingenuity site, but we shall see.



telfordhams

Dave G0CER reports “ In March of this year when we did the **RTTY Sunday contest** in LWVH - the results are out. G3Z came 78th out of 82 in the SOAB6 (single op all band 6 hours)- we didn't operate for that long and it worked as a demo station.”

Meanwhile, the **TDARS microwave group (G8UGL, G3UKV, G4NKC, G8UPF)** have had some successes: On 5.7GHz, they were top (1st) in the May and July monthly events, plus ditto on 10 GHz both months, and also top scorers on 24GHz in May. Operation this year has been almost exclusively on the summit of the Brown Clee near Ludlow (IO82QL). TDARS members are welcome to join the group, but alert one of the above members if you wish to join us, since car access is through a locked gate, unless you are a keen walker!

Last Newsletter the claimed **scores for VHF NFD** (July 1-2) were published. In the final results, we did not repeat our pole position from Pole Bank this year, but we still came runners-up in the **'Mix & Match' Section**.

Overall: 2nd. 2380 normalised points. (Winner Trowbridge & DARC with 3208)

50MHz: (R section). **4th** of 22 entries. 72 QSOs. 15649 pts. 514 pts normalised.

144MHz: (R section). **2nd** of 21 entries. 261 QSOs. 58925 pts. 679 pts normalised.

432MHz: (Low power). **2nd** of 10 entries. 71 QSOs. 12434 pts. 635 pts normalised.

1296MHz: (Low power). **2nd** of 5 entries. 39 QSOs. 7533 pts. 552 pts normalised.

The 'normalised' result per band means our score relative to the top scoring station—so on 6m for example, we had a score of just over half that of leaders Lothians RS.(514/1000 or 51.4%)

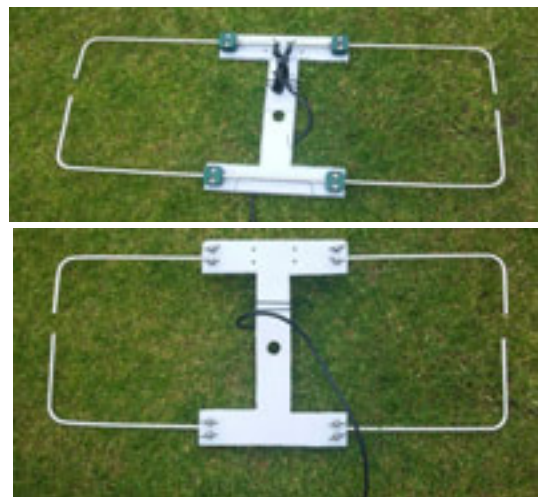
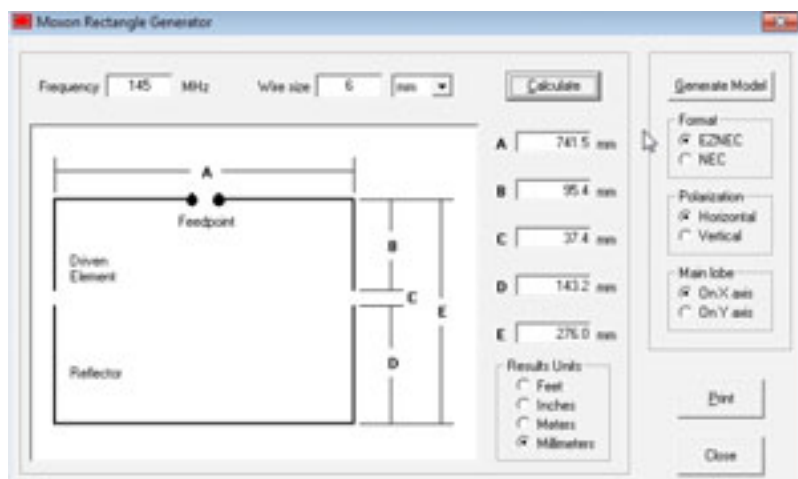
Finally, Simon's (G0UFE) team of 6 members came 5th in the Open Section of the **50MHz Trophy contest** in mid June. They had a commendable 464 QSOs, scoring 90,508,530 points (yes—over 90 million!) with best DX 5B4AIF at 3407Km in Cyprus. All the groups above Telford were Contest Groups. The photo shows the winner's trophy presented to the RSGB by TDARS back in the 1990s—elusive to TDARS as ever.



Two Metre Chopping Board Moxon by Paul M0PNN

The holidays are coming and I needed to make a light weight strong two meter antenna that fits on a SOTA pole (fibreglass fishing rod). After thinking about it for a while I decided to make a 2 element Moxon.

Moxon Antennas are small easy to make and have the best front to back ratio of any two element antenna. I used the calculator at <http://www.moxonantennaproject.com/> to get the dimensions.



I have plenty of 6mm aluminium rod left over from other antenna projects, so I decided to use that for the elements with a 3/8 16 gauge tube (fits over the 6mm rod) on the driven element for the feed point. The reflector is the hardest part to make, working out where to bend the rod so it's the right width but using a brake pipe bender makes this much easier.

The element clamps are Stauff 1/4 inch hydraulic hose clamps. I used M6 35mm A2 cap socket bolts and wing nuts to secure the elements to the boom. The feed point is made from M4 A2 socket head bolts again with wing nuts. The join between the 3/8 tube at the feed point is made with 6mm nylon 66 rod. I was going to add a couple of 3/8 clamps at the feed point for extra strength but they're not needed—the antenna is very robust as it is. The coax is joined to the driven element with ring type insulated crimp connectors, crimped, then soldered, treated with liquid electrical tape then wrapped in amalgam tape when dry and finally electrical tape wrapped around to finish the job.

A choke balun is used at the feed point, just two tight turns of coax (WD40 can) zip tied together but not so tight as to compress the coax: probably not needed. The boom is a cheap £2.50 chopping board from B & M cut to size with a jig saw the hole for the support was cut with a 20mm hole cutter. The coax used is very important; RG mini 8 super offered the best weight-to-loss ratio, but still the 10m of coax weighs more than the antenna.

The Important Stuff

The SWR is 1:1 at 145 MHz and rises to 1.4 at 144 MHz and is flat to 147 MHz and above, which is characteristic of a Moxon. The SWR rises quickly below the resonant frequency and slowly above resonant frequency. The Moxon works well on receive. I can hear the Kent Beacon GB3VHF no problem at 248km from my back garden. Mounting is no problem. Pull the fibreglass pole through the hole in the boom.

The hole in the boom can be changed to fit the diameter of the pole - you have: just don't drill it too big to start with, or mount the Moxon too far up the fibreglass pole - it's light but not that light. Tape the joins up between the sections and tape the coax to the pole for extra support. If you're using wire for your Moxon just remember the velocity factor of the wire being used needs to be taken into account. "Google it". **CHEERS ! Paul.**



At the very end of August, we received mail from **Gordon Pooler's (G0WQH)** daughter (Charlie) that he had died. Many members will remember Gordon, for his weekly cuppa and for his endless friendly chat at the club. His funeral will take place at Wrockwardine Wood church at midday on Thursday 21st September, followed by the crematorium at 1pm.

An Old Design Revisited—by Brian G6UDX

For a period during the 1970s one particular type of VHF/UHF high gain antenna was popular with amateurs. The slightly enigmatic antenna I refer to is that known as the quagi. Its proponents claim it has a combination of the desirable features of a Yagi and those of a cubical quad. Various sources state the design was first published in the newsletter of the Southern California VHF Club.

A little background on the yagi

The antenna was invented in 1926 by Shintaro Uda of Tohoku Imperial University, Japan with assistance from his colleague Hidetsugu Yagi. However the "Yagi" name has become more familiar with the name of Uda often omitted. This appears to have been due to Yagi filing a patent on the idea in Japan without Uda's name in it, and later transferring the patent to the Marconi Company in the UK.

Yagi antennas have been widely used from World War II in radar systems to home terrestrial television antennas along with long distance short-wave communication by radio amateurs. The key element to the Yagi theory is the phases of the currents flowing in the various elements of the antenna. The parasitic elements of the Yagi antenna operate by re-radiating their signals in a slightly different phase to that of the driven element. In this way the signal is reinforced in some directions and cancelled out in others. As a result these additional elements are referred to as parasitic elements.

In view of the fact that the power in these additional elements is not directly driven, the amplitude and phase of the induced current cannot be completely controlled. It is dependent upon their length and the spacing between them and the dipole or driven element. As a result, it is not possible to obtain complete cancellation in one direction. Nevertheless it is still possible to obtain a high level of gain in one direction, and also a high degree of cancellation in another to provide a good front to back ratio.

Although much development has taken place since the yagi's original invention, one name stands out for his sterling work Guenter Hoch (DL6WU). Even though his works were published more than 30 years ago, despite the improvements in computers and optimisation software, few designs have improved upon his work by more than the marginal 0.5 dB. Moreover, this small, virtually meaningless increase very often had to be very expensive paid, sacrificing other important performance characteristics. The only real disadvantage of yagis designs at VHF and UHF (and even more so, SHF) is they are affected by rain. With "straight" elements, water droplets can cling to the element tips, which are high-Z (and high voltage) points and detune them significantly.

Introducing the quad antenna

The Cubical Quad or Quad antenna has traditionally not been as widely used as its more popular cousin the Yagi. However the cubical quad beam antenna is able to provide some advantages in a number of circumstances.

Since its first introduction in the 1940s, the quad antenna has found uses in a number of areas. It has been used for some television antennas, but it has also seen a lot of use within amateur radio applications for use at HF and VHF / UHF.

Although the cubical quad antenna is not nearly as widely used as the Yagi, it still has advantages and can be used to good effect in many instances.

Quad antenna basics

The basic quad element can be seen to be derived from two dipole elements stacked one above the other and fed in phase. This arrangement in itself gives gain because of the phasing effect between the two dipoles.

The next stage in the evolution is to retain the two separate dipoles but bend the ends together. It is found that the voltages at the ends of the antennas are in phase with one another.

As a result it is possible to connect these ends together and remove one of the feeders to create the basic quad element. As such the loop forming the element is a full wavelength with each side being a quarter of a wavelength.

If the loop length is retained but the aspect ratio is changed the feed-point impedance can be changed as can the gain of the full wave length loop (with respect to a reference dipole). The feed-point of a "square" loop has an characteristic impedance of approximately 115 Ω . A circular antenna is the best and has in a certain direction 1.34 dB gain with respect to a dipole in the same position. Maximum gain can be obtained with a 1.5λ circumference.

Quoting from William Orr, (W6SAI) "Whereas parasitic beams having twenty or thirty parasitic directors are efficient, high gain antennas, it would seem... that maximum practical number of parasitic loop elements for the quad array is limited to four or five." This is also confirmed by Dale R Kubichek (N6JSX) in his booklet on VHF/UHF Quad Antenna.

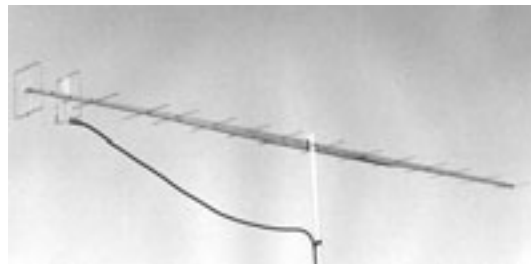
Thanks for Newsletter input this time:

**Brian G6UDX, Mike G6DFD, Paul M0PNN, Graham G7LMF, Don M0TBQ,
Richard W6/M1RKH, Dave G0CER, Paul M0PLA**

Next edition mid November: Keep it coming-don't be shy!

What originally inspired the development of the Quagi antenna was the need for a low-cost, high-gain antenna for moon-bounce communications. Some of the commercial antennas then available fell far short of their advertised gain figures, especially at 432 MHz. After a series of attempts to improve the performance of one particular commercial 11-element Yagi, attention was focused on the driven element which had an especially inefficient gamma match. On a hunch, the driven element was removed and replaced with a quad-style loop. The forward gain immediately increased from 6.4 dBd. to 9.8 dBd. This was a dramatic improvement for an antenna rated by the manufacturer at 13 dBd.

The antenna, which is usually built with little more than hardware store materials, became popular in many parts of the world. The original design was republished in amateur radio publications in countries as diverse as the former Soviet Union and India. Thousands of them have been built over the years.



Fast forward to today. During the intervening years we've seen other attempts at squeezing better performance from antennae. Instead of a single driven element *à la* the cubical quad or uda-yagi, a number of these tend to rely upon a phased array as the driven section. I cite a ZL-special with the addition of parasitic directors or the Loop Fed Antenna (LFA).

Perhaps its time to revisit it?

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The Worked All Britain Awards Group (W.A.B.) was devised by the late John Morris G3ABG in 1969. This was to promote an interest in Amateur Radio in Britain and to sponsor a series of awards based on the geography of Great Britain and Northern Ireland.

The introduction of this new award has been prompted by several factors including:

*The decline in general activity due to the poor propagation at this point of the sunspot cycle.

*The need to encourage members to maintain a regular on the air presence, even if no special activity is planned.

*To raise awareness of W.A.B.'s 50th Anniversary in 2019



It was therefore decided to introduce an award for which members can get credit by working squares (the Ordnance Survey of Great Britain “National Grid Reference” (NGR)) on a daily basis.

The award runs for an 18 month period from **1st July 2017 to 31st December 2019** and is a points system based, and for this award ONLY, a square may be worked again on a daily basis for credit.

	Certificate	Endorsement	Trophy & New Certificate
UK HF	250	each 250	each 2500
EU HF	100	each 100	each 1000
UK VHF/OUTSIDE EU HF/ACTIVATED	50	each 50	each 500

So far, I've made 750 inter-G contacts since the beginning of July and some WAB members have made in excess of 1250 so it appears to be achieving at least one of its goals. The award is also available to SWL's on a 'Heard' basis. If you are interested in this or any of the other WAB awards then let me know.

Graham (G7LMF)

“ A little piece for your Newsletter...”

(K6 / M1RKH ? - Ed)

I took an Uber home on Thursday evening after a night out. Uber and Lyft are the go to services that have replaced many Taxis. For me it's great to not have to get into a taxi that smells and has sudden "credit card reader" problems.

As I was walking around the back of the car to get in, I noticed the familiar sight of a 2/70 antenna mounted on the rear hatch. And would you know, the driver was licenced (but not a current member of any club) and had his radio display mounted next to his gear shift on the centre console.

We listened to an interesting D Star net. Consisting of a local operator, someone in Brazil and then towards the end a guy from New Zealand pops on.

I've always believed it, the world is a small place. Made smaller these days by many different technologies. But the politeness and courtesy of radio always shines compared to other means of communication.

All the best from your Silicon Valley correspondent. Richard



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And some more Little Pieces. . . . From Paul M0PLA

Battle re-enactment.

GB1BRE was active 19th 20th August near Whichurch. The station was manned with TDARS members during the whole weekend. There were around 3000 members of the public who visited that weekend and apart from a little rain on the Saturday, things went really well.

Main operators were John M0JZH, Simon G0UFE, Don M0TBQ and John G4YDT. Other members of the club assisted in setting up and dismantling the equipment. Equipment used was all the club's equipment: Icom 7600 using 100 watts and the Comet H422. Their log shows some 90+ QSO's from the UK and all over Europe.



SOTA

The last SOTA (M0PLA/P) activation was a joint one with GB3ZME/YOTA from the Wrekin 5th August; the morning was SOTA with M0PLA/P—30 QSO's All over the UK, Europe and contacts into Sweden and Russia. These were on 20m and 40m, plus most of the UK on 2M. The GX3ZME/YOTA (for the RSGB's YOTA week, August 5-12 – Ed) had 8 or 9 contacts with Jamie (my son) holding a quick greetings with most of these.



Time	Call	Band	Mode	
07:21z	IQ1GE	14MHz	SSB	
07:26z	OE7FMH	14MHz	SSB	
07:26z	OE6GND	14MHz	SSB	
07:27z	OK2POT	14MHz	SSB	
07:28z	OK1DVM	14MHz	SSB	
07:29z	SP9AMH	14MHz	SSB	
07:29z	OK1SDE	14MHz	SSB	
07:33z	RW3XZ	14MHz	SSB	
07:37z	IU1AUG	14MHz	SSB	
07:43z	MOJZH	14MHz	SSB	
07:49z	EA2OT	14MHz	SSB	
07:52z	F8AAB	14MHz	SSB	
08:00z	G3UKV	14MHz	SSB	
08:08z	2E0DAM	14MHz	SSB	
08:14z	GW0UFE/P	14MHz	SSB	
08:18z	Y0R5SB	14MHz	SSB	
08:19z	DL7OO	14MHz	SSB	
08:22z	H89CRO	14MHz	SSB	
08:52z	YO4PIB/P	14MHz	SSB	525 YO/MC-226
08:52z	YO4EVA/P	14MHz	SSB	525 YO/MC-226
09:01z	DH9FAV/P	14MHz	SSB	525 DM/HE-064
09:05z	DL/MOVM/LP	7MHz	SSB	525 DM/BW-054
09:21z	M3FEH	7MHz	SSB	
09:21z	DL6FBK	7MHz	SSB	
10:01z	LB8CG/P	14MHz	SSB	525 LA/BU-122
10:42z	2E0LKC	144MHz	FM	
10:43z	2E0LMD	144MHz	FM	
11:08z	2E0MDJ	144MHz	FM	
11:12z	G0LGS	144MHz	FM	
11:13z	G7LMF	144MHz	FM	

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Into the Doldrums —By Paul M0PNN

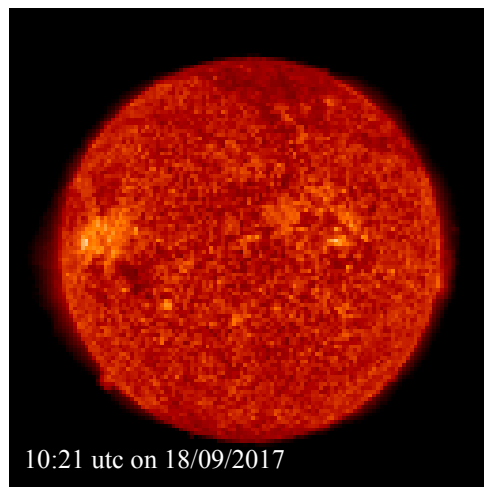
As Solar cycle 24 winds down and the solar flux drops its tempting to turn the radio off for the next few years even more so now that the predictions for the strength of the next solar cycle are so poor. Let's not forget we have been here before. I worked plenty of DX during the doldrums of the last cycle 184 DXCC including VK,ZL between 2008 and 2010. so all is not lost.

What next? It's not all bad news the lower bands 40/80/160 will become quieter: Es tend to be better on 6m with less radio black outs. The higher bands will open but less often; between 2008 and 2010 I worked 97 DXCC on 10m alone.

When will the next cycle Start ?

During the next couple of years the next cycle 25 will start to show itself sunspots with a reverse polarity magnetic field will start to appear early 2019. How big will it be all the evidence is pointing towards a small ever decreasing in strength solar cycle, but remember NASA predicted Solar cycle 24 was going to be a massive cycle, the strongest for 100 years; the same origination is predicting a small cycle. I can just imagine a group of NASA scientists playing pin the tail on the donkey. Old Sol will keep us guessing.

Cheers Paul M0PNN



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**From Mike G6DFD . . .** I wonder if M0PNN (Paul) ever sent a QSL card to a station with the call sign JA1**MP** ? Well if he did, did you know he was the founder of Yaesu? He's still listed in QRP.com and the FT1000**MP** was named in honour of his work with the company.

Yaesu was founded as Yaesu Musen Co. Ltd. in 1959 by a Japanese radio amateur Sako Hasegawa with callsign JA1MP in the Tokyo neighbourhood of Yaesu, yes it's a place near the station, according the Wikipedia. The initial intent seemed to have been to develop and manufacture commercial and amateur radio transceivers for the Japanese market but by 1964 there were sales agreements placed in Australia and Germany. In Europe the equipment was sold under the Yaesu brand and the Sommerkamp brand, anyone remember them ? In 1963 the Swiss firm Sommerkamp imported Yaesu equipment and sold it using their own brand. [ I remember Sommerkamp, since I once owned an FTDX400 which gave 400W output—a real beast—Ed ]



## Getting going on FT8 mode - by Dave G0CER

If you are hearing lots about this new digital mode and want to try it out – here's a get-you-going guide. There is a lot more to learn, but this is an introduction. You might want to watch the Youtube videos at the bottom first.

FT8 mode is a new narrow digital mode that has set waterfalls around the world on fire (to mix metaphors). It's a developmental version of WSJT-X 1.8.0 RC2 at the moment. RC means its not ready as a final version to be distributed as a standard version. So 1.7 is the main WSJT-X (but no FT8).

An ARRL page sums what FT8 is nicely so I won't. “The new mode is named after its developers, Steven Franke, K9AN, and Joe Taylor, K1JT. The numeral designates the mode's 8-frequency shift keying format. Tones are spaced at 6.25 Hz, and an FT8 signal occupies just 50 Hz. Unlike JT65 or JT9, transmit and receive cycles in FT8 each last about 15 seconds. Like JT65, FT8 requires accurate time synchronization. An auto-sequencing feature offers the option to respond automatically to the first decoded reply to your CQ. “

You WILL need to accurately set your computers clock- NTP server for linux and Get Dimension 4 installed on your PC .Otherwise you would may be unpopular and calls won't get answered. <http://www.thinkman.com/dimension4/>

### **Versions of wsjt-x with FT8**

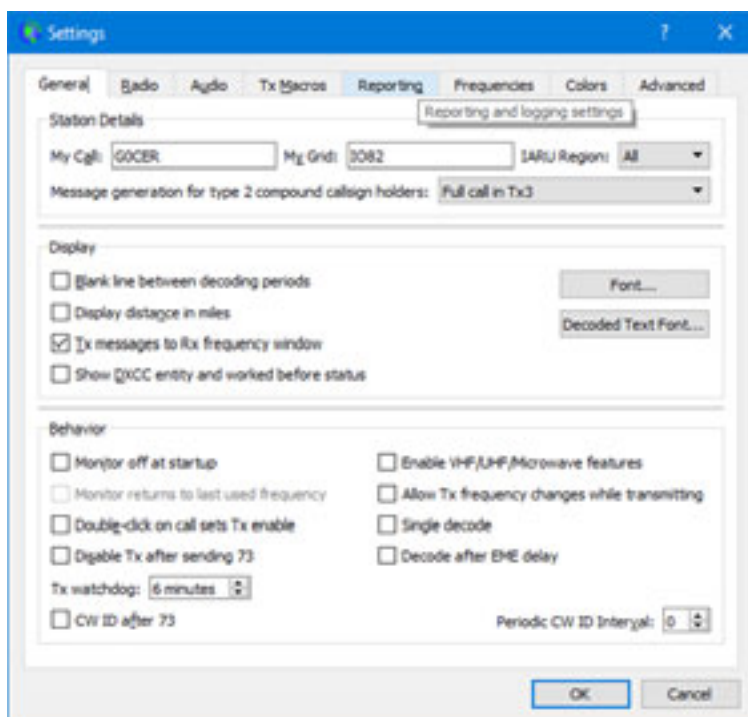
There are versions for Window (XP-10) Linux (also Rasp Pi) and Mac. Download your version from <https://sourceforge.net/projects/wsjt/> or <https://www.physics.princeton.edu/pulsar/K1JT/wsjt.html>

### **Special notes for Raspberry Pi**

<http://www.k0pir.us/wp-content/uploads/2016/11/WSJT-X-Install-Raspberry-Pi.pdf> (or you get the old 1.7 version)

Run the install and run the program (press F2 to start configuring) - see screen capture below

- Set your call and locator
  - Set audio in/out (in Audio Tab) – adjust audio so main interface right-side is NOT RED.
  - If you are going to use this on 50MHz and up click "enable VHF/UF/microwave features"
- Choose your radio and ports in "Radio" tab – get CAT working



## Understanding the interface

Assuming you have a functioning install now – it has traffic like the image below and clicking on the right-hand 'Tune' button makes your radio send with modulated signals and NO ALC. You can lower the output with the slider on the right or drive on your radio to reduce ALC to zero or just above.

### Notes:

- **Auto Seq** When ticked is an auto-pilot that takes over and does the QSO once you start it. Best use it because 15 seconds is quick – it's around 12 sec the fast decode 3 seconds and next over.
- **Traffic colours** The program helps by making CQs green and in a QSO your overs RED and signals on your Rx freq yellow. You can change this.

**Starting a QSO** You double-click a call in the left panel to load it to have a QSO – Nothing will happen UNTIL you click **ENABLE TX** (shown red in image) Your station will call the selected station, but if they call someone else. WSJT-X now realises this and stops calling.

## Explaining right panel:

This is a set of transmissions based on the signal reports that are actively being heard (it sends the latest report once if it changes by the time the other station answers you. Once QSO is initiated

WSJT-X 'knows' which to use out of the interleaved QSO 'overs' in the list, to answer a CQ or to TX from a CQ you made.

### A typical QSO

```
CQ WJ0H FH41 > Wj0H is calling CQ
WJ0H G0CER IO82 < I'm answering with them my locator
G0CER WJ0H -00 > wj0h sending me -00db report
WJ0H G0CER R -14 < I'm Replying with -14db report
G0CER WJ0H RRR > Wj0h confirms they have locator and report
WJ0H G0CER 73 < I'm saying 73!
G0CER Wj0H 73 > WJ0H confirms 73 & QSO is complete!
```

## CQ-ing & other operational notes – the tick boxes help here

- Overs are 15 seconds each – QSOs can be just over a minute complete.
- Choose frequency from the drop-down on the lower-right the CAT control will set the right frequency.
- Timing: Americans generally send on second 15seconds (and 3<sup>rd</sup> and seconds) of minute (even) so if you are intending to get an answer from the West – set the tick box to '**Send 1st/Even**' – see diagram
- Generally – you leave it un-ticked. If answering CQ's the software will handle it
- Select somewhere on the waterfall that is quiet by clicking it.
- **To CQ Choose CQ option by clicking Tx6 on the lower-right panel**
- Once a QSO is complete – the box offering to log it opens up.

**Once the other station completes – click the Halt Tx - important, or it may send 73 over and over!**

The log file is ADIF format – you can access it via clicking **File** across the top of the interface

### Website used:

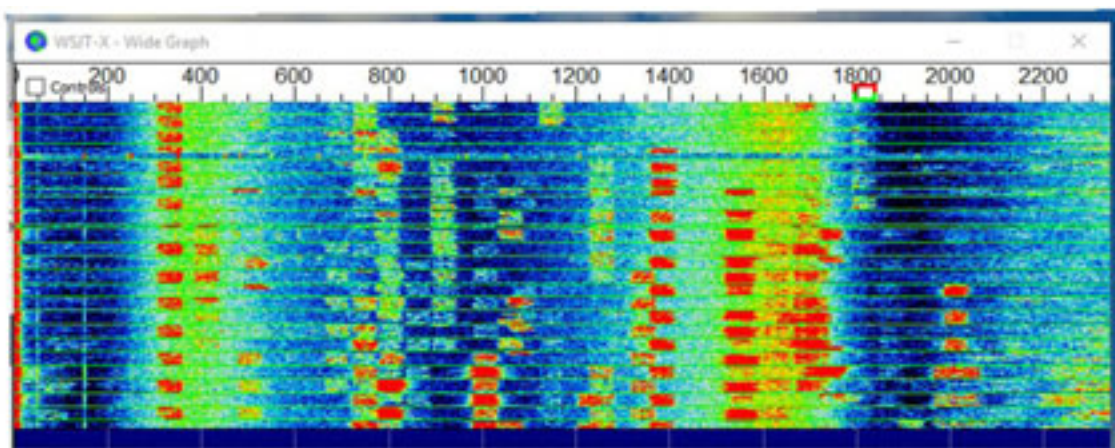
<http://www.arrl.org/news/ft8-mode-is-latest-bright-shiny-object-in-amateur-radio-digital-world>

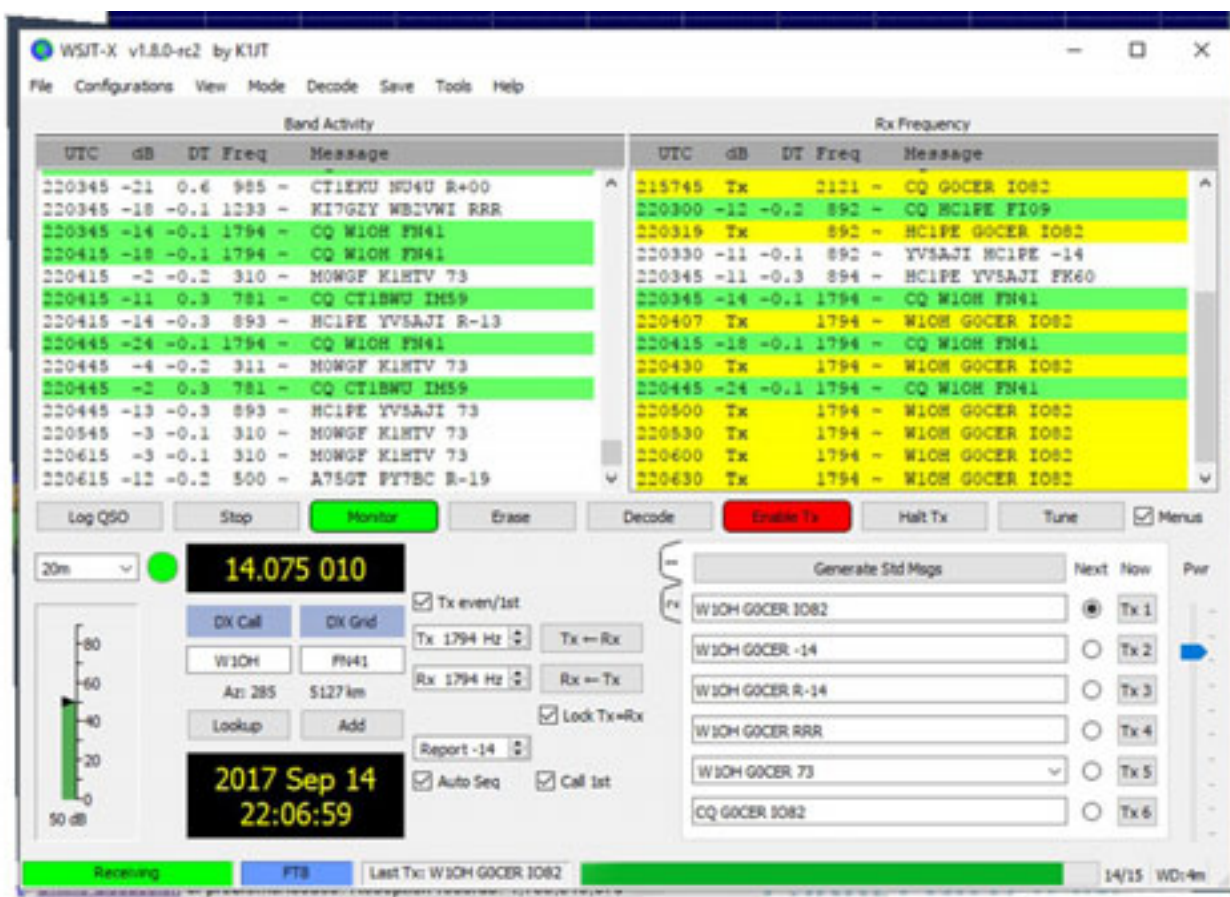
### See also

<https://www.youtube.com/watch?v=QoCngsKW9tc>

[https://www.youtube.com/watch?v=LIIA\\_utAJfs](https://www.youtube.com/watch?v=LIIA_utAJfs)

**Finally** – it's great on 6m – especially with QSB. It's not as sensitive as JT65 give it a try. Check out <https://pskreporter.info/pskmap.html> your signals get mapped on there, plenty of SWL stations will let you know where your signals are getting to.





## New 6 metre Moxon Beam—by Paul M0PLA

Hi All - I have put the EFHW on hold until Monday and started playing with a 6M Moxon after my visit in the week from Don M0TBQ as he said there is a contest on next Thursday evening that can help out the club, so I thought why not ?

My Moseley Mini AW32 can tune in, and I also have my triband diamond V2000. I have been playing with the idea of building a beam for a while: well can't let Paul 'PNN have all the glory LOL. At work we use 2 and 3 Metre lengths of ally tube for protection of the intruder cable below 6 foot (ie roller door contacts etc).

So I thought I will try and use these to build a beam one day when I have spare time: (lol I have loads of that at the moment).

I used the Moxon calculator software and as I was using ally and there is no covering, I didn't have to play around with velocity factor, so I just cut the ally to the correct size and used my pipe bender to try and help with the angles and thought what can I use for the air spaces between the director and reflector? and came up with plastic conduit oval pipe that is used for channelling cables etc. The good thing is as it is oval-ish, it lets the 12.5 mm tube fit inside it great.

As seen from the attached photos I was amazed at the result, I was gob smacked I didn't have to make any adjustments apart from my first reading on the analyzer was with the choke above the beam and the resonant frequency was down at 48 MHz, so I moved the choke below the beam and as seen - wow!

All I need know is to hear someone on there LOL. Any comments or adjustments that you think I should make, please let me know.

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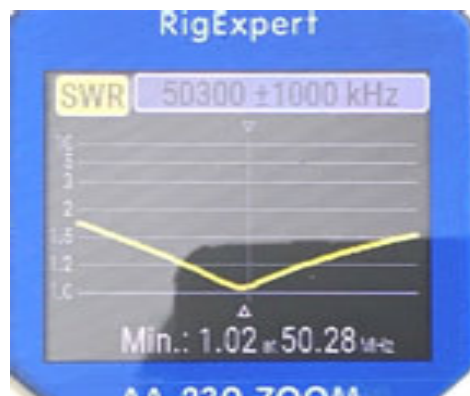
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Summits on the Air (SOTA) scoring rules—by Martyn G3UKV  
[Taken from the G-QRP reflector, sent from GM4TOE]

“ Four QSOs are required to claim an Activation – known as “Qualification”.

The Activator receives the number of points that are allocated to the summit (e.g. GM/WS-001, Ben Nevis, 10 points)

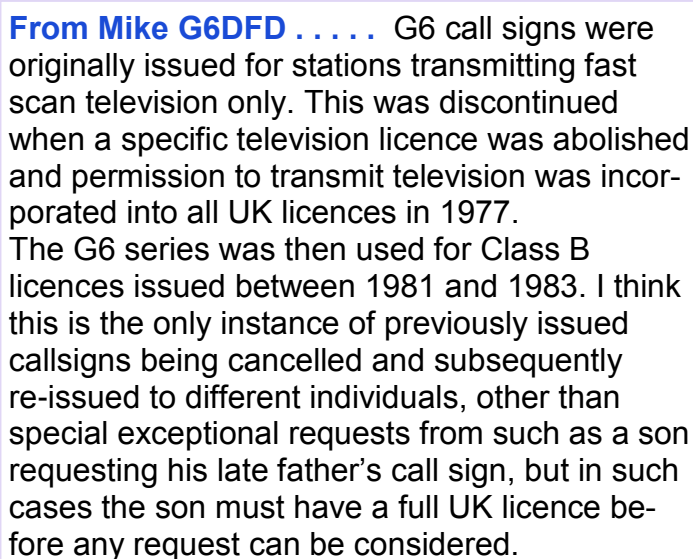
The Activator can only claim these points once per calendar year ( 1 January – 31 December)

Where a summit attracts a winter bonus ( sometimes a summer bonus, but rare ) these points will be added to the score if the activation is made during the bonus period.

The summit may be activated a second time during the bonus period, to claim just the bonus points, when the activator has already qualified the summit outside the bonus period.”

<http://www.sota.org.uk/Joining-In/General-Rules>

SOTAwatch (<http://www.sotawatch.org/index.php>) has links to all the relevant databases and is the best place to find answers to your questions



**The finished product:** Brian G6UDX's new base for the 70cm (or other) antenna mount. See last Newsletter article.

## G-QRP Social/Buildathon and Telford HamFest September 2-3 2017

